

137/453

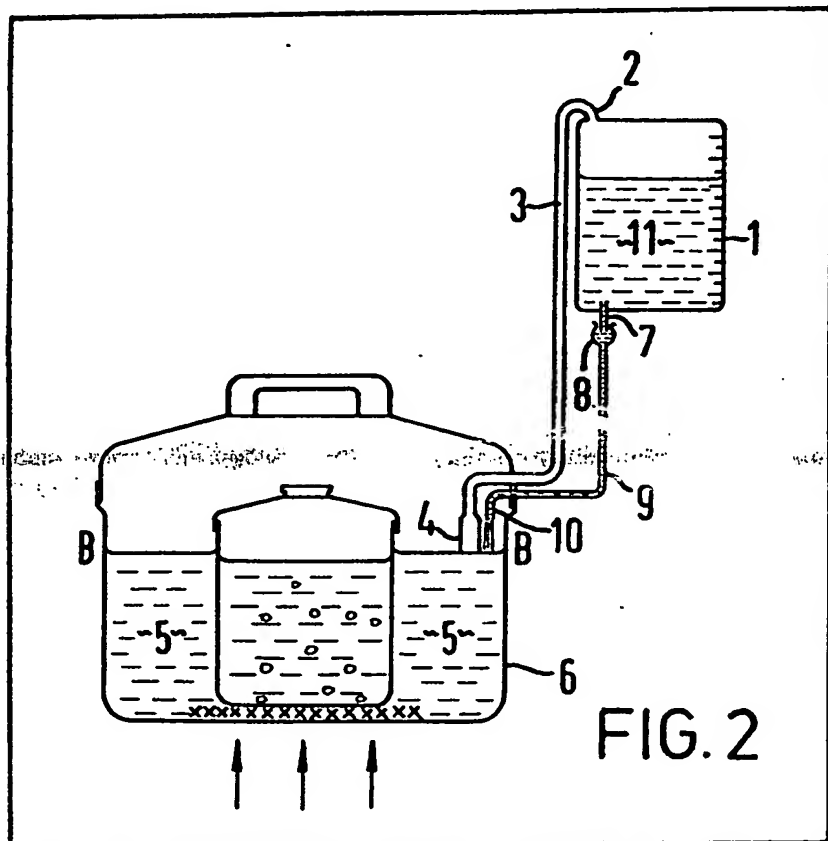
(12) UK Patent Application (19) GB (11) 2 054 856 A

- (21) Application No 7924570
 (22) Date of filing
 13 Jul 1979
 (43) Application published
 18 Feb 1981
 (51) INT CL³
 G05D 9/02
 (52) Domestic classification
 G1H 5
 (56) Documents cited
 GB 1434914
 GB 759487
 GB 607986
 (58) Field of search
 A4D
 G1H
 (71) Applicant
 Chan Sui-Ling Tony, of
 457 Lockhart Road, 14/F,
 Hong-Kong
 (72) Inventor
 Chan Sui-Ling Tony
 (74) Agent
 Kings Patent Agency
 Limited, 148a Queen
 Victoria Street, London,
 EC4V 5AT

(54) Liquid Level Control

(57) Apparatus for maintaining a predetermined liquid level B—B in a vessel 6, for example a steam cooking apparatus, comprises a water reservoir 1 located above water level

B—B water supply means 7,8,9,10 from the reservoir to the vessel and a pipe 2,3,4 extending from the gas space in the reservoir to the level B—B in the vessel whereby only when the bottom of the pipe 4 is uncovered due to the water level falling does water flow to the vessel.

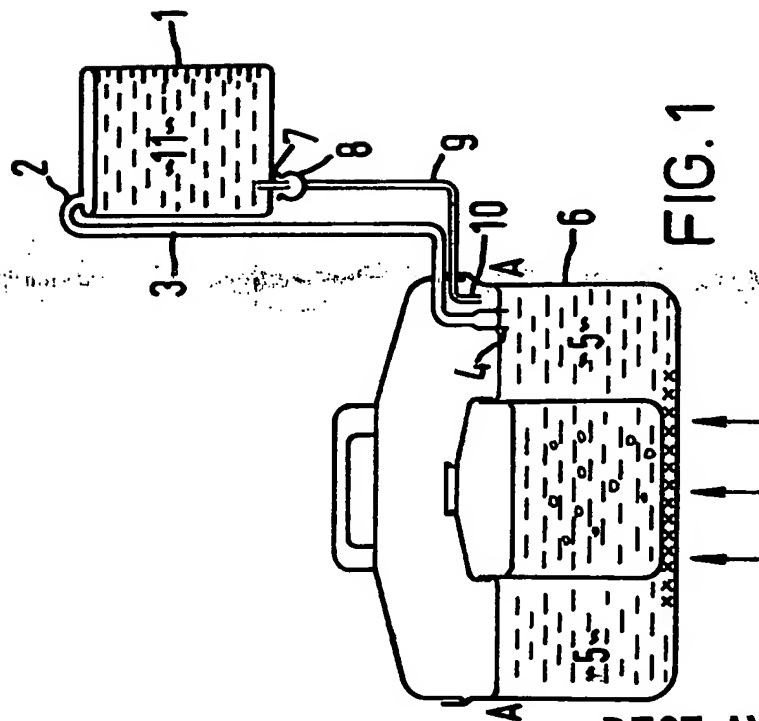
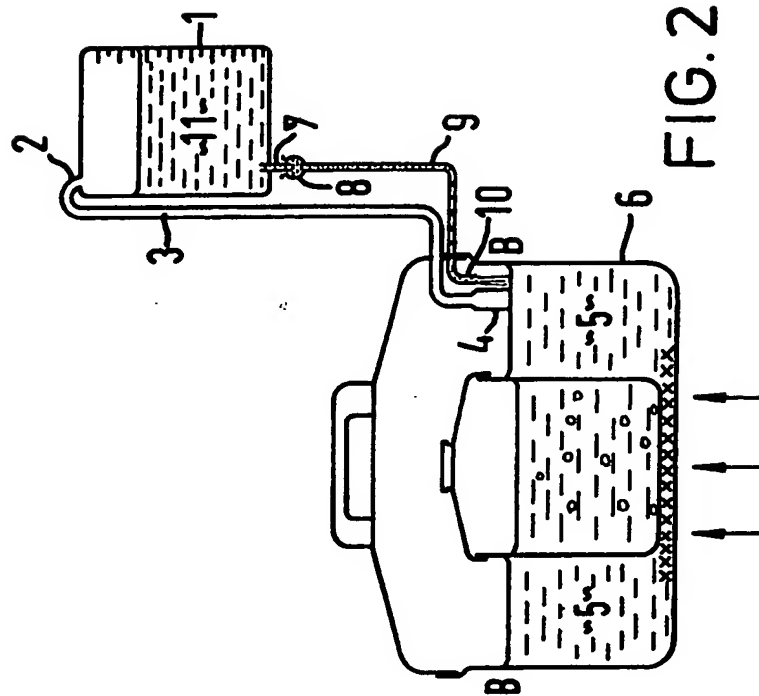


The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

GB 2 054 856 A

BEST AVAILABLE COPY

1/1



SPECIFICATION

Water Refill Assembly

This invention relates to a water refill assembly.

The invention seeks to provide a refill assembly to
5 maintain a water supply to an independent vessel,
for example steam cooking vessels.

According to this invention there is provided a
water refill assembly comprising a water reservoir
located above the water level in a vessel, said
10 water reservoir having water outlet means
adapted to communicate with said vessel and
inlet means in gaseous communication with said
reservoir adapted to contact the water level
within said vessel, a column of gas in said inlet
15 means preventing flow of water from reservoir
into vessel, the arrangement being such that
when the vessel water level decreases allowing
gaseous communication between vessel and
reservoir, water flows from said reservoir into said
20 vessel until the vessel water level contacts said
inlet means to prevent further flow.

A preferred reservoir is a container with a small
bore tube acting as outlet, a separate tube
positioned thereunder the leading away therefrom
25 into a vessel.

Suitable vessels include any household
cooking apparatus. The inlet may comprise a
length of tubing, the end of which is positioned in
the proximity of the water level in the vessel,
30 leading away therefrom into the top of the
reservoir.

By way of example only, reference will now be
made to the accompanying drawings, illustrating
an embodiment and in which:—

35 Fig. 1 illustrates the assembly with reservoir
prevented from functioning, and

Fig. 2 illustrates the assembly with reservoir
functioning.

As shown in Figure 1, a reservoir 1 containing
40 water 11 has a gas inlet duct 2 connected via a
tube 3 to inlet manifold 4. This manifold 4 is
located just below the level A—A of water 5 in a
cooking vessel 6, with water actually present
inside the manifold 4; a column of gas being
45 trapped within communication tube 3.

The reservoir 1 further includes a water outlet
duct 7 of narrow bore tubing, underneath of
which a thistle-funnel bowl 8 of a water feed tube
9 is positioned. The outlet duct 7 and water feed
50 tube 9 are separated at the thistle funnel bowl 8
in order that steam and expanded air penetration
of the water surface tension existing at duct 7 is
prevented.

This prevents an uncontrolled flow of water 11
55 from the reservoir 1. The feed tube outlet 10 is
positioned above the level A—A of water 5 in the
vessel 6.

With the water level at position A—A, the
reservoir is prevented from functioning; steam
60 and expanded air generated within the vessel
cannot enter the manifold 4 to allow any water
11 out of the reservoir. The restrictive size of
outlet duct 7 prevents flow of liquid 11 under its
own weight.

65 As shown in Figure 2, after a period of heating,
the water level in the vessel 6 has fallen to level
B—B through evaporation into steam. As the level
falls below the height of the inlet manifold 4,
steam and expanded air enter the manifold 4
70 passing through tube 3 and into the reservoir 1
via the inlet duct 2. The flow of gases upsets the
column of trapped air in tube 3 and so allows
some water 11 contained in the reservoir 1 to be
discharged through outlet pipe 7 and into thistle
75 bowl 8, through feed tube 9 and into the vessel 6
through the outlet 10. Water is thus discharged
until the level in the vessel 6 rises and enters the
manifold 4, creating another column of trapped
air in tube 3.

80 In this method of operation water is transferred
from reservoir 1 to vessel 6 until the level of water
meets the inlet manifold 4 whereupon water
delivery ceases.

The main advantage of the invention lies in
85 the provision of a water supply, to for example a
cooking vessel, that is independent of human
operation once installed and until the reservoir
empties.

Claims

90 1. A water refill assembly comprising a water
reservoir located above the water level in a vessel,
said water reservoir having water outlet means
adapted to communicate with said vessel and
inlet means in gaseous communication with said
95 reservoir adapted to contact the water level
within said vessel, a column of gas in said inlet
means preventing flow of water from reservoir into
vessel, the arrangement being such that when the
vessel water level decreases allowing gaseous
100 communication between vessel and reservoir,
water flows from said reservoir into said vessel
until the vessel water level contacts said inlet
means to prevent further flow.

2. An assembly according to Claim 1, wherein
105 the reservoir is a container including a small bore
tube as a water outlet.

3. An assembly according to Claim 2, wherein
a separate tube is positioned underneath the
small bore tube to communicate with the vessel.

110 4. An assembly according to any preceding
claim wherein the vessel comprises a steam
cooking apparatus.

5. An assembly according to any preceding
claim wherein the inlet means comprises a tube,
115 one end of which is positioned in the proximity of
the water level in the vessel, the other end of
which is in communication with the top of the
reservoir.

6. An assembly according to any preceding
claim wherein a column of gas contained within
120 the inlet means prevents flow of water from the
reservoir to the vessel.

7. An assembly according to any preceding
claim wherein the water outlet means includes a
125 water feed tube having a thistle funnel bowl in
communication with the reservoir outlet.

BEST AVAILABLE COPY

8. A water refill assembly constructed and arranged to function substantially as herein

described with reference to and as illustrated in the accompanying drawings.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1981. Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

BEST AVAILABLE COPY